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(54) **THERMORESPONSIVE, BIODEGRADABLE, ELASTOMERIC MATERIAL AND USES THEREFOR**

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(58) **Field of Classification Search**

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See application file for complete search history.

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(57) **ABSTRACT**

Provided are novel biocompatible copolymers and compositions comprising the copolymers. The copolymers are non-toxic and typically have an LCST below 37° C. Compositions comprising the copolymers can be used for wound treatment, as a cellular growth matrix or niche and for injection into cardiac tissue to repair and mechanically support damaged tissue. The copolymers comprise numerous ester linkages so that the copolymers are erodeable in situ. Degradation products of the copolymers are soluble and non-toxic. The copolymers can be amine-reactive so that they can conjugate with proteins, such as collagen. Active ingredients, such as drugs, can be incorporated into compositions comprising the copolymers.

21 Claims, 36 Drawing Sheets